Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-17. (Cancelled)

18. (Currently Amended) A method to coat a metal element with a self-assembled coating layer, comprising: [[by]]

electrochemical anodic polymerisation starting from a solution of a monomer of an inherently conductive polymer and at least one dopant,

wherein said self-assembled coating layer comprises ~~comprising~~ an inherently conductive polymer and at least one negative group,

wherein ~~whereby~~ said inherently conductive polymer is functioning as a backbone structure for said negative group and said negative group is [[being]] derived from said dopant.

19. (Original) A method according to claim 18, whereby said metal element is functioning as anode.

20. (Cancelled)

21. (Cancelled)

22. (Withdrawn) A method to improve the adhesion of a metal element to a polymer material by applying a self-assembled coating layer on a metal element and embedding said metal element with said self-assembed coating layer in a polymer material, said self-assembled coating layer comprising an inherently conductive polymer and at least one negative group, whereby said self-assembled coating layer is functioning as a backbone structure for at least one positive group or ion and whereby said positive group or ion is chosen in such a way to improve the adhesion with said polymer material.

23. (Withdrawn) A method according to claim 22, whereby said polymer material comprises a thermoplastic material.

24. (Withdrawn) A method according to claim 22, whereby said positive ion is selected from the group consisting of the transition elements of the periodic table of elements, the earth alkali elements and the elements from group III and IV.

25. (New) A method according to claim 18, wherein said inherently conductive polymer is selected from the group consisting of polyaniline, polypyrrole, polythiophene, polyphenylenevinylene, polydiacetylene, polyacetylene, polyquinoline, polyphenylenevinylene, polyheteroarylenvinylene and derivatives, copolymers and mixtures thereof.

26. (New) A method according to claim 18, wherein said negative group comprises an inorganic or organic negative group.

27. (New) A method according to claim 18, wherein said self-assembled coating layer has a thickness between 1 nm and 1000 nm.

28. (New) A method according to claim 18, wherein said self-assembled coating layer has a thickness between 10 and 100 nm and a porosity of less than 1 %.

29. (New) A method according to claim 18, wherein said self-assembled coating layer comprises an inherently conductive polymer and at least one negative group functioning as a backbone structure for at least one positive group or ion.

30. (New) A method according to claim 29, wherein said positive ion is selected from the group consisting of the transition elements of the periodic table of elements, the earth alkali elements, and the elements from group III and IV.

31. (New) A method according to claim 18, wherein said metal element comprises an elongated metal element.

32. (New) A method according to claim 31, wherein said elongated metal element comprises a metal wire, a metal cord, or a metal tape.

33. (New) A method according to claim 18, wherein said metal element comprises a structure comprising at least one elongated metal element.

34. (New) A method according to claim 33, wherein said structure comprises a woven, non-woven, braided, knitted, or welded structure.

35. (New) A method according to claim 18, wherein said metal element is coated with a metal or a metal alloy coating.

36. (New) A method according to claim 35, wherein said metal or metal alloy comprises zinc or a zinc alloy.